

# MANVI GUPTA

B22 Gaurikund Hostel, IIT Mandi - North Campus, H.P. 175005 (India)

✉ manvigupta98@gmail.com • ☎ (+91) 9985556304 • 🌐 Manvi07 • in manvi-gupta98 • 🌐 manvi07.github.io

## OBJECTIVE

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I have a strong interest in Computer Science and Mathematics. I wish to develop my skills in practical Computer Science along with a strong theoretical background. I aim to direct my knowledge towards solving challenging problems which can help me learn better.

## EDUCATION

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**RWTH Aachen University, Germany**  
*RWTH Exchange Worldwide*

October 2019 - February 2020

**Indian Institute of Technology(IIT) Mandi**  
*Bachelor of Technology, 3rd year*  
*Computer Science & Engineering*

August 2017 - Present  
CGPA: 9.10/10

## TECHNICAL STRENGTHS

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<b>Computer Languages</b>	C, C++, Python
<b>Software &amp; Tools</b>	Git, Redmine, CMPL, Gurobi, Kubernetes
<b>Web Technologies</b>	HTML, CSS, Flask, PHP
<b>Machine Learning</b>	Keras, Tensorflow, SciKit-Learn, MLflow
<b>Familiar Technologies</b>	PHP, MySQL, Hadoop, OpenCV, OpenMP

## PROJECTS

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### CALL TREE REVERSAL

*Using Mixed Integer Programming*

October 2019 - Present

*Prof. Dr. Uwe Naumann*

- **Task:** Extending the existing Mixed Integer Programming (MIP) formulation of Call Tree Reversal with result checkpointing and parallel computation using GUROBI optimizer.
- **Use case:** Debugging (in high-performance scientific computing in particular), Adjoint Model computation in Algorithmic Differentiation
- **Challenges Involved:** Combinatorics knowledge for verifying CTR results

### CIF VALIDATOR WITH REST API

*A real world tool to validate Crystallographic Information Files (CIF)*

April 2019 - June 2019

*Dr. Arti Kashyap*

- **Task:** Worked in a team of 3 to make a functional RESTful API for validating CIF files.
- CIF File is parsed using PyCODCIF and the frontend is built upon Barebone framework.
- **Collaboration:** In collaboration with the material science group at EPFL Switzerland. The tool is to be integrated on materialscloud.org.

### ADHD DISEASE DETECTION

*Deep Learning*

January 2019 - February 2019

*Dr. Aditya Nigam*

- Implemented a Neural Network model to classify **fMRI images** into 10 different components of human brain & find the correlation coefficients.
- **Challenges faced:** Small Data Set & limited knowledge of brain anatomy
- **Technologies Used:** Keras, Tensorflow

## EXPERIENCE

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### Product Internship - Adobe India Systems Private Limited

*May 2020 - Present*

Working on pipeline and standardization of Machine Learning Algorithms using an orchestration platform for integration into the Adobe Sensei framework.

### Teaching Assistant - CS 309

*February 2020 - Present*

An undergraduate course on Information & Database Systems at IIT Mandi

## RELEVANT COURSEWORK

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Mathematical Foundation of Computer Science  
Information and Database Systems  
Advanced Data Structures and Algorithms  
Computer Organization  
SAT & SMT Solvers

Machine Learning  
MapReduce and Big Data  
Satisfiability Checking  
High Performance Computing  
Parallel Programming

## ACADEMIC ACHIEVEMENTS

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- 2nd position in Batch of 2017 for Semester III with SGPA 9.0/10
- Selected for RWTH Exchange Worldwide Scholarship based on highest CGPA.
- Winner of *Hacking the Google Maps*, online competition by Heuristics IIT Mandi.
- Selected for ACM India Summer School 2019 on Cyber Security and Data Analytics.
- First, among the 7 teams from the college in Flipkart GRiD Machine Learning challenge.
- Ranked in All-India Top 1% (amongst 11,86,000 candidates) in JEE Mains 2017 and Top 2.8% (amongst 1,59,540 candidates) in IIT-JEE Advanced 2017
- Qualified National Talent Search Examination(NTSE) 2015 stage 1.
- Zonal Rank 2 in Mathematics in FIITJEE Talent Reward Exam 2015.

## POSITIONS OF RESPONSIBILITY

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### Founder Coordinator, ACM-W Chapter IIT Mandi

*Chairperson, August 2019 - Present*

- **Responsibilities:** To guide girl students about opportunities in the field of computing and connect the students to great women leaders of the world. Conducting sessions to motivate them and make them aware of all the upcoming and existing opportunities in their field.
- **Vision:** Increase girls participation in technical field and broaden the coding community.

## OTHER ACHIEVEMENTS

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- Runner up in STAC Hackweek-2018 held at IIT Mandi.
- Runner up in Hostel Day coding competition.
- Winner of Intra College mobile photography competition 2017.

## EXTRA-CURRICULARS

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- Active member of WISE-Women in Science & Engineering IIT Mandi.
- Member of Literary Society & IEEE Student Chapter, IIT Mandi.
- Represented IIT Mandi at Inter IIT Cultural Meet 2017.
- Sponsorship team member for Exodia-2018(Tech-Cult Fest of IIT Mandi).